UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,634	01/18/2002	Murali Bashyam	M-11907 US	8726

33031	7590	05/05/2006	EXAMINER

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EXAMINER
REFAI, RAMSEY

ART UNIT	PAPER NUMBER
2152	

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/051,634	BASHYAM ET AL.
	Examiner	Art Unit	
	Ramsey Refai	2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>03 April 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-124</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-124</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

Responsive to Amendment received on April 3, 2006. Claims 1, 27, 28, 29, 58, 59, 89, 90, 120, and 121

have been amended. Claims 1-124 remain presented for examination.

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject
> matter, which the applicant regards as his invention.

2.   Claims 9-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to

particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 9 and 10 recite the limitation "at least one of said plurality of buffers". There is

insufficient antecedent basis for this limitation in the claim. Claims 11-14 depend on claims 9 and 10

above, therefore are rejected under the same rationale.

3.   The text of those sections of Title 35, U.S. Code not included in this action can be found

in a prior Office action.

4.   <u>Claims 1-10, 15-41, 46-72, 77-103, and 108-124 rejected under 35 U.S.C. 103(a) as being</u>

<u>unpatentable over Cohen et al (U.S. Patent No. 6,389,462) in view of Geagan, III et al (U.S. Patent No.</u>

<u>6,735,634).</u>

5.   As per claim 1, Cohen et al teach a method of managing network communication comprising:

terminating a first transmission control protocol ("TCP") connection at a first network element,

wherein said first TCP connection is between said first network element and a second network element,

and said first TCP connection is intended to be terminated at a third network element **(column 7, lines 11-**

35 and column 2, lines 39-65; original connection to origin server is terminated and redirected to

proxy);

· initiating a second TCP connection between said first network element and a third network

element (column 2, lines 51-65, column 15-19 and column 7, lines 27-35);

establishing communications between said second (client) and said third network elements

(origin servers) via said first network element (proxy) (column 7, lines 1-35 and column 2, lines 26-

44);

determining need for data transfer between said second and said third network elements by

monitoring a property of a cache (column 1, lines 48-58, column 3, lines 40-46, and column 7, lines 15-

35; checks if data requested available) ; and

transferring said data between said second and said third network elements (column 1, lines 48-

58, column 3, lines 40-46, and column 7, lines 15-35; transfers requested data from origin server to

client).

6.   Cohen et al fails to teach the use of a plurality of buffers. However, Geagan, III et al teach a

receive buffer and a transmit buffer operated under the control of a memory controller/sequencer in a

proxy (column 15, lines 22-34 and column 44-49). It would have been obvious to one of the ordinary

skill in the art at the time of the applicant's invention to combine the teachings of Cohen et al and

Geagan, III et al because Geagan, III et al's use of a proxy with transmit and receive buffers controlled by

a memory controller in Cohen et al's method would provide a method to monitor buffers in a proxy to

support multiple simultaneous TCP connections with clients requesting data.

7.   As per claim 2, Cohen et al teach said second network element initiates said first TCP connection

for said third network element (column 2, lines 39-65 and column 6, lines 47-67; client request is

directed to origin server).

8.   As per claim 3, Cohen et al teach said communications between said second and said third

network elements are established using said first and said second TCP connections (column 7, lines 1-

35).

9.   As per claim 4, Cohen et al teach said communications between said second and said third

network elements forms an end-to-end TCP connection **(column 2, lines 39-65 and column 7, lines 1-**

35).

10.   As per claim 5, Cohen et al teach said first network element is a proxy server **(column 7, lines 1-**

35).

11.   As per claim 6, Cohen et al fail to teach wherein a control unit of said proxy server monitors said

plurality of buffers. However, Geagan, III et al teach a receive buffer and a transmit buffer operated under

the control of a memory controller /sequencer **(column 15, lines 22-34 and column 44-49)**. It would

have been obvious to one of the ordinary skill in the art at the time of the applicant's invention to

combine the teachings of Cohen et al and Geagan, III et al because Geagan, III et al's use of a proxy with

transmit and receive buffers controlled by a memory controller in Cohen et al's method would provide a

method to monitor buffers in a proxy to support multiple simultaneous TCP connections with clients

requesting data.

12.   As per claim 7, Cohen et al teach control unit transfers said data between said second and said

third network elements **(column 7, lines 1-35; inherent in proxy)**.

13.   As per claim 8, Cohen et al teach said proxy server supports transparent communications between

said second and said third network elements **(abstract, column 1, lines 24-27, and column 2,lines 39-**

65).

14.   As per claim 9, Cohen et al fail to teach at least one of said plurality of buffers is a receive buffer.

However, Geagan, III et al teach the use of a receive buffer in a proxy **(column 15, lines 22-34 and**

column 44-49). It would have been obvious to one of the ordinary skill in the art at the time of the

applicant's invention to combine the teachings of Cohen et al and Geagan, III et al because Geagan, III et

al's use of a proxy with transmit and receive buffers controlled by a memory controller in Cohen et al's

method would provide a method to monitor buffers in a proxy to support multiple simultaneous TCP

connections with clients requesting data. Receive buffers hold incoming data requested by clients until

operating system/controller is ready to deal with the data.

15.   As per claim 10, Cohen et al fail to teach at least one of said plurality of buffers is a transmit

buffer. However, Geagan, III et al teach the use of a transmit buffer (column 15, lines 22-34 and column

44-49). It would have been obvious to one of the ordinary skill in the art at the time of the applicant's

invention to combine the teachings of Cohen et al and Geagan, III et al because Geagan, III et al's use of

a proxy with transmit and receive buffers controlled by a memory controller in Cohen et al's method

would provide a method to monitor buffers in a proxy to support multiple simultaneous TCP connections

with clients requesting data. Transmit buffers transmit requested data to requesting client.

16.   As per claim 15, Cohen et al teach said second network element is one of a plurality of clients

(Figure 1 and column 6, line 23).

17.   As per claim 16, Cohen et al teach one of a plurality of applications on said client initiates said

first TCP connection for said client (column 6, lines 47-50, column 1, lines 59-67 column 7, lines 1-11,

and abstract).

18.   As per claim 17, Cohen et al teach said third network element is one of a plurality of servers

(column 1, lines 11-23, column 7, lines 1-35 column 2, lines 26-44, abstract, and Figure 1).

19.   As per claim 18, Cohen et al teach a data switching unit of said proxy server determines which

one of said plurality of servers to use for said second TCP connection (column 3, lines 22-27, 40-46,

column 7, lines 27-48, and column 1, lines 44-67).

20.   As per claim 19, Cohen et al teach monitoring said first TCP connection (column 7, lines 1-47

and Figure 2).

21.   As per claim 20, Cohen et al teach receiving a request for data from said application; and

determining whether said request requires said second TCP connection with one of said plurality of As

per claim 21, Cohen et al teach data switching unit receives said request for data via said control unit

(**Figure 2 and column 7, line 55-column 8, lines 10**).

22.   As per claim 22, Cohen et al teach determining of said second TCP connection is done by said

data switching unit (**column 3, line 10-30, column 1, lines 44-67, column 2, lines 40-65, and column 7,**

lines 1-47).

23.   As per claim 23, Cohen et al teach if said request does not require said second TCP connection

with one of said plurality of servers, servicing said request for data, and closing said connection with said

client (**column 1, lines 13-23, column 2, lines 35-65, column 7, lines 1-46**).

24.   As per claim 24, Cohen et al teach said request for data is served by passing data from said data

switching unit to said control unit for transmission to said application on said client (**Figures 2, 4,**

column 15, lines 35-56, and column 7, line 55-column 8, line 10).

25.   As per claim 25, Cohen et al teach if said request requires said second TCP connection with one

of said plurality of servers, selecting a first server from said plurality of servers, and initiating said second

TCP connection with said first server (**column 3, lines 22-27, 40-46, column 1, lines 44-67column 1,**

lines 13-23, column 2, lines 35-65, and column 7, lines 1-46).

26.   As per claim 26, Cohen et al teach said application requests said end-to end TCP connection with

said first server (**column 1, lines 48-67, column 3, lines 7-28, column 6, lines 47-67 and column 7,**

lines 11-48).

27.   As per claim 27, Cohen et al teach receiving said data on said second TCP connection from said

first server; monitoring space in said cache; and if said cache has space, determining whether said first

TCP connection need additional data (**column 1, lines 48-58, column 3, lines 40-46, and column 7, lines**

15-35). Cohen et al fails to teach the use of buffers. However, Geagan, III et al teach a receive buffer and

a transmit buffer operated under the control of a memory controller/sequencer in a proxy (**column 15,**

lines 22-34 and column 44-49). It would have been obvious to one of the ordinary skill in the art at the

time of the applicant's invention to combine the teachings of Cohen et al and Geagan, III et al because

Geagan, III et al's use of a proxy with transmit and receive buffers controlled by a memory controller in

Cohen et al's method would provide a method to monitor buffers in a proxy to support multiple

simultaneous TCP connections with clients requesting data.

28.   As per claim 28,Cohen et al teach if said first TCP connection needs said additional data,

requesting said additional data from said first server; and repeating said steps of receiving, storing,

transferring, monitoring and determining until said request for data from said application is served

(column 13, line 18 –column 14, lines 20; packets are obtained from origin server until request is

completed).

29.   As per claim 29, Cohen et al teach said additional data is transferred into said transmit buffer

without a request for said additional data **(column 7, lines 1-48 and column 13, line 18 –column 14,**

lines 20; packets of the data requested will be transferred from origin server to proxy until

completed).

30.   As per claim 30, Cohen et al teach if said request for data from said application is served, closing

said first TCP connection with said client **(column 1, lines 48-58, column 3, lines 40-46, and column 7,**

lines 15-35; inherent that a connection established to get requested data gets terminated upon

completion of request).

31.   As per claim 31, Cohen et al teach said closing of said connection is done by said control unit

upon a receiving a request for closing said connection from said data switching unit **((Figures 2, 4,**

column 15, lines 35-56, and column 7, line 55-column 8, line 10).

32.   As per claims 32-41, 46-72, 77-103, 108-124, these claims contain similar limitations as claims 1-

10, and 15-31 above, therefore are rejected under the same rationale.

33.   Claims 11, 13, 42, 44, 73, 75, 104, and 106 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Cohen et al (U.S. Patent No. 6,389,462) in view of Geagan, III et al (U.S. Patent No.

6,735,634) and in further view of Riddle (U.S. Patent No. 5,920,732).

34.   As per claims 11 and 13, Cohen et al fail to teach that a buffer is pre-allocated. However, Riddle

teaches a method for preallocating buffers (**abstract and column 5, lines 5-15**). It would have been

obvious to one of the ordinary skill in the art at the time of the applicant's invention to combine the

teachings of Cohen et al, Geagan, III et al, and Riddle because Riddles' use of a preallocated buffers in

Cohen et al and Geagan, III et al's method would designate specific portions of the buffers for specific

content, such as client requests.

35.   As per claims 42, 44, 73, 75, 104, and 106, these claims contain similar limitations as claims 11

and 13 above, therefore are rejected under the same rationale.

36.   Claims 12, 14, 43, 45, 74, 76, 105, and 107 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Cohen et al (U.S. Patent No. 6,389,462) in view of Geagan, III et al (U.S. Patent No.

6,735,634) and in further view of Radko (U.S. Patent No. 5,687,392).

37.   As per claims 12 and 14, Cohen et al fail to teach that a buffer is dynamically allocated. However,

Radko et al teach that use of a dynamically allocated buffer (**abstract**). It would have been obvious to

one of the ordinary skill in the art at the time of the applicant's invention to combine the teachings of

Cohen et al, Geagan, III et al, and Radko because Radko's use of a dynamically allocated buffer in Cohen

et al and Geagan, III et al's method would allow for increased buffer space by not designating specific

portions of the buffers for specific content and dynamically allocating space as data space is needed.

38.   As per claims 43, 45, 74, 76, 105, and 107, these claims contain similar limitations as claims 12

and 14 above, therefore are rejected under the same rationale.

Response to Arguments

39.   Applicant's arguments with respect to claim 27 have been considered but are moot in view of the

new ground(s) of rejection.

40.   Applicant's arguments filed April 3, 2006 have been fully considered but they are not persuasive.

- In the remarks, the Applicant argues in substance that:

    a.   there is no motivation to combine Cohen and Geagan.

    b.   Cohen does not anticipate newly amended claim 1's feature of monitoring *a property* of a

    data buffer.

- In response to argument:

    a.   In response to applicant's argument that there is no suggestion to combine the references,

    the examiner recognizes that obviousness can only be established by combining or modifying the

    teachings of the prior art to produce the claimed invention where there is some teaching,

    suggestion, or motivation to do so found either in the references themselves or in the knowledge

    generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5

    USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

    In this case, Cohen teach that determining need for data transfer between said second and said

    third network elements by monitoring cache **(column 1, lines 48-58, column 3, lines 40-46, and**

    column 7, lines 15-35; checks if data requested available); but fails to teach the use of a

    plurality of buffers. However, Geagan, III et al teach a receive buffer and a transmit buffer

    operated under the control of a memory controller/sequencer in a proxy **(column 15, lines 22-34**

    and column 44-49). Cohen et al's use of a cache and a buffer **(column 15, lines 45-47, abstract)**

    would have motivated one of the ordinary skill in the art at the time of the applicant's invention to

    combine the teachings of Cohen et al and Geagan, III et al because Geagan, III et al's use of a

    proxy with transmit and receive buffers controlled by a memory controller in Cohen et al's

method would provide a method to monitor buffers in a proxy to support multiple simultaneous

TCP connections with clients requesting data.

b.   In response, the Examiner respectfully disagrees. It is inherent to monitor a *property* of a

device when monitoring a device such as a cache or buffer. Therefore Cohen et al and Geagan, III

do teach monitoring a property of a data buffer. Cohen teach that determining need for data

transfer between said second and said third network elements by monitoring cache **(column 1,**

lines 48-58, column 3, lines 40-46, and column 7, lines 15-35; checks if data requested

available); but fails to teach the use of a plurality of buffers. However, Geagan, III et al teach a

receive buffer and a transmit buffer operated under the control of a memory controller/sequencer

in a proxy **(column 15, lines 22-34 and column 44-49).** Cohen et al's use of a cache and a buffer

(column 15, lines 45-47, abstract) would have motivated one of the ordinary skill in the art at

the time of the applicant's invention to combine the teachings of Cohen et al and Geagan, III et al

because Geagan, III et al's use of a proxy with transmit and receive buffers controlled by a

memory controller in Cohen et al's method would provide a method to monitor buffers in a proxy

to support multiple simultaneous TCP connections with clients requesting data.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should

be directed to Ramsey Refai whose telephone number is (571) 272-3975. The examiner can normally be

reached on M-F 8:30 - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

Bunjob Jaroenchonwanit can be reached on (571) 272-3913. The fax phone number for the organization

where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be obtained

from either Private PAIR or Public PAIR. Status information for unpublished applications is available

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direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Ramsey Refai
Examiner
Art Unit 2152
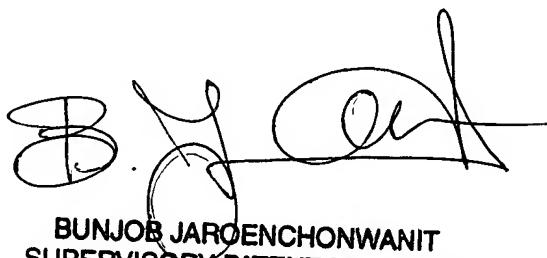
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